

MA in HCI- Thesis

School of Communications

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Section A: MA in HCI Thesis Guidelines

A.1 Thesis Students

Thesis students must have excellent English, self-management skills, and a passion for research and innovation. The thesis topic will be based on the adviser's expertise and the student's interest. Thesis spots are limited, and students are responsible for identifying a relevant Thesis adviser and receiving that advisor's approval.

A.2 Student Acceptance

- **Undergraduate grades:** average 87 and above (special cases may be considered).
- **MA Semester A grades:** an average of 87 and above (special cases may be considered).
Thesis interview and selection process: all eligible thesis applicants will be invited to a meeting with thesis faculty, in which the thesis advisors will present their area/s of research. Students will apply to one advisor of their choice. Each advisor will review the student's thesis application letter, and if relevant will invite the student to a personal interview, and accept or reject the application. At the end of the first round of student selection, advisors will announce whether they can accept more students or not. Rejected students can decide if they want to apply to another advisor, and the process will resume. Students that were not selected by any advisor, can not join the thesis track. Students have the option to re-apply in the next year, after graduation. Thesis acceptance is not guaranteed to any student but depends on a successful match between advisor and student in that specific year.
- **Trial period:** the first three months of the thesis process will serve as a "trial period", in which both the student and the advisor should confirm or withdraw from their commitment to the process.

A.3 Mandatory courses for Thesis students include

- All required program courses.
- Thesis Seminar (2 credits): A thesis seminar will be held during Semester B and the summer semester, led by the head of the thesis committee, head of the program, and the individual thesis advisors. The seminar is mandatory for thesis students and includes advanced research methods, academic writing, how to choose a research question, target publication goals, review of existing HCI papers and thesis works. Some of the sessions will be led by the faculty and some will be dedicated to a research colloquium, with presentation of research projects from faculty members, guests, and research students. At the end of this course, students will submit their thesis proposal. The research proposal will be prepared by each student with their advisor, according to the standard instructions. The proposal must be submitted to the thesis committee for approval and filing.
- Statistics for HCI Research (2 credits), with Dr. Hadas Erel.
- The Thesis research course (8 credits), which is the independent thesis work towards the final thesis submission.

A.4 Recommended schedule

1. Admission: students will be admitted to the thesis track during the second semester according to an advisor-based selection process, and in unique cases during the first semester (early thesis).
2. Proposal: students will submit a written research proposal, approved by the advisor, by the end of the summer semester of the first year, and for an early thesis by the end of the 2nd semester of the first year.
3. Thesis submission: by the end of the second year's summer semester, and by the end of Semester B of the second year for early thesis students. An extension is possible with special approval for submission during the third year.

A.5 Thesis students engage in extensive research that includes one of the following

- Design, implementation, and evaluation of new innovative technology or interactive experience, leveraging HCI design and evaluation methodologies. For example, a new robotic object that helps children fall asleep at night, or a new VR experience that helps cancer patients cope with chemotherapy sessions. The range of possible topics varies based on the student's passion and the adviser's research domain.
- Extensive theoretical grounding and evaluation of existing innovative technology. This technology can come from the research lab's existing projects, or from an industry collaborator. For example: evaluating the potential for Amazon's Alexa to act as a mediator in family dynamics, or evaluating different strategies for addressing driver's fatigue in autonomous cars. The range of possible topics varies based on the student's passion and the adviser's research domain.
- All thesis students are required to write their research work in the format of an academic paper, including motivation, theoretical grounding, prior work, system design & implementation, research methodology, research findings, discussion, and conclusion. Students are encouraged to submit their final paper to a competitive international HCI conference, under the guidance of their thesis adviser.
- Thesis students pursue their research during the summer and the second year of studies. Students will join the lab's research team, participate in lab events and bi-weekly meetings, meet with their adviser regularly, and progress independently towards the written Thesis or academic paper.

A.6 Thesis submission

Each thesis advisor should assign at least one external (non-IDC) examiner, and optionally an additional examiner, either internal or external. The examiners are expected to be permanent faculty members in relevant fields.

After the thesis is approved by the advisor, the thesis will be sent to review by the examiner

(or examiners). Each examiner will complete a short written review report and may request minor or major corrections to the thesis. The revisions will not affect the grade. An oral examination will be held, in which the student will present the thesis to the advisor and at least one additional staff member. The external examiner is encouraged but not required to attend this examination.

Additionally, students are encouraged to present their work in a public lecture, i.e., giving a talk about their research to a wider audience of MA students (open also to family, friends, etc.). This is not mandatory.

A.7 Criteria for thesis scope and quality

The thesis advisor has the responsibility to determine if and when the thesis is ready for submission, in terms of scope and quality; this applies to both submission of the draft to the examiners, as well as the final submission after revisions.

All theses will be placed on a special "thesis shelf" in the program's building and in the IDC Library. The IDC library is obliged by law to send a digital copy of every thesis to the National Library (in Jerusalem). Thus, the thesis should be written, formatted, and edited professionally. We will provide a template for uniform formatting (in Word and Latex).

The thesis can be submitted in one of two formats: (1) a thesis document of up to 70 pages in English; or (2) a publication-worthy academic paper in the CHI conference format or similar. Acceptance of the paper for publication is not a requirement.

Thesis as an academic paper: a thesis must be "publish-worthy" as a full academic article (8-10 pages) in a standard of an international competitive conference in the field of HCI/VR/CS. This is assuming that the student contribution is that of the first author or second author with "equal contribution". Papers accepted as full papers in competitive peer-reviewed international conferences can be accepted as a thesis and submitted with an addition of cover page, extended acknowledgments, table of contents, and appendices unless the advisor requires an expanded version of the work. If a paper was submitted but rejected with positive reviews and constructive comments, it can be submitted as a thesis after major revisions, subject to the advisor's approval, and including the paper's reviewers' comments. Regarding fees for traveling and attending international conferences – each advisor will decide on a case by case basis if partial or full funding is provided.

Some labs may not be accustomed to competitive conference articles and typically aim at full journal papers, which are typically beyond the scope of an MA thesis. In such cases, the submitted thesis will be an independent document, with the scope defined by the thesis Advisor.

A.8 Thesis grade

Thesis grade would be structured as follows: 50% of course average, 10% thesis oral exam, and 40% written thesis grade. If there is a gap greater than 10 points among the thesis examiners' grades, the program head will assign another examiner. The thesis grade will reflect the level of work and its contribution according to the following parameters:

65-74 Worthy academic thesis

75-84 A good thesis that justifies a graduate degree

85-90 A very good thesis that may be accepted as a short article at an international conference

91-95 Prominent work containing original contribution that may be accepted as an article in an international conference or scientific journal

96-100 groundbreaking work that includes original and in-depth scientific contribution, submitted as an article to a competitive peer-reviewed international conference or scientific journal

A.9 Thesis failure of completion

In the following cases, the student will not be able to continue in the thesis track and the work done will be converted into an MA final project (4 credits):

- A student who does not complete a thesis on time, including approved extensions
- A student who is not interested in continuing with a thesis
- A student whose advisor is not interested in continuing the support of the thesis (effort will be made to find a replacement)
- A student who did not meet the required grades for a degree in a thesis track (87 per semester)
- A student who wrote a thesis but did not meet the examiners' requirements even after a round of corrections.

Section B: Thesis advisors

Each thesis student will have a main thesis advisor, which is an internal staff member in the rank of Senior Lecturer or above. Multiple co-advisors are possible, including external advisors.

B.1 The program's Thesis advisors and their relevant research domains:

- Dr. Oren Zuckerman: Children and technology, Human-robot interaction, Tangible interaction.
<https://scholar.google.co.il/citations?user=8oJMKbAAAAAJ&hl=en>
- Prof. Doron Friedman: VR, AR, BCI, Neuroscience, and HCI.
<https://scholar.google.com/citations?user=a-DKqoUAAAAAJ&hl=en>
- Prof. Amir Amedi: Neuro HCI, brain technologies. sensory substitution
<https://scholar.google.com/citations?user=WADV6B4AAAAAJ&hl=en>
- Dr. Jonathan Giron: VR and Biodigital, Human integration researcher,
<https://dblp.org/pid/145/3256.html>
- Dr. Hadas Erel: Cognitive psychology and UX, Human-human-robot interaction, Creativity
<https://scholar.google.com/citations?user=Ee8iAEoAAAAAJ&hl=en>
- Dr. Beatrice Hasler: Social VR, Virtual Reality, Embodiment, Social cognition, Intergroup conflict
<https://scholar.google.com/citations?user=CAOE3L0AAAAAJ&hl=en>

B.2 Students can also select a co-adviser from IDC Herzliya or from another institution:

- IDC Psychology faculty member with expertise in clinical psychology (adult or child), social psychology, interpersonal relationships, positive psychology, decision making, etc.
- IDC Computer Science faculty member with expertise in Machine learning, Deep learning, Image recognition, Computer graphics, Vision, Algorithms, etc.
- Faculty members from other schools at IDC, other universities in Israel, international universities.